Draft

Resource Adequacy Steering Committee Meeting

August 29, 2006 - 10 AM to 3 PM

Notes

ATTENDEES: Tom Karier, Paul Norman, John Fazio, Wally Gibson, Mary Johannis, Terry Morlan, Dick Adams, Ted Coates, Jim Litchfield, Jeff Atkinson, John Prescott, Stefan Brown, Howard Schwartz, Steve Fisher, and Steve Weiss
Phone attendees: Aliza Seelig, Bill Drummond, and Mark Ohrenschall

Tom Karier welcomed the meeting attendees and indicated that the Council's September meeting agenda includes the July 24th event and the Resource Adequacy Implementation Approach recommended by the Steering Committee for Council adoption at the July 28th meeting. Paul Norman noted that the time schedule for the Regional Dialogue has slipped somewhat; so we have a little more time to decide on the capacity standard and still be compatible with the Regional Dialogue schedule.

I Preliminary July 24th Retrospective & Implications for Pilot Capacity Standard

Mary Johannis presented information for both the CA ISO and the PNW relating to the heat wave event of July 24th. Based on California's Resource Adequacy Requirement and the Technical Committee's suggested summer sustained peaking capacity target of a 15% Planning Reserve Margin (PRM) presented at the July 28th meeting, both California and the PNW were resource adequate from a planning perspective, but had difficulty finding sufficient resources to cover load and operating reserves on July 24th. Tom asked if the 24% PRM for CA ISO was a target, or an estimate of their reserve. Mary responded that it was their month-in-advance estimate of the reserve margin based on 1:2, or expected peak load for average temperature conditions.

A question came up about the temperature/load relationship in the NW. John Fazio said that for the power pool area, the relationship is about 300 MW per degree temperature deviation, apparently both in the summer and winter. For the PNW the summer relationship results in less MW, but it tracked well with the estimated NW load on the 24th.

BPA reported that they were offering energy to those NW utilities that needed it for reliability reasons but some, like Snohomish, are not control areas and therefore could not declare an alert. A better system to identify those utilities with emergencies is needed to make sure that any energy and capacity being held in reserve is made available to them. The Snohomish question may have been an economic issue as opposed to a reliability issue because they are in the BPA control area. PNGC also found itself in that situation. If BPA had provided energy, there may have been a high economic penalty. Was Snohomish actually inadequate on a planning basis? Not sure, they may have oversold due to under forecasting temperatures.

Wally then showed a table, which indicated that temperatures were consistently under forecasted at PDX and SEATAC for the period of July 20th through the 24th. So, the perception that the PNW was barely generation sufficient to meet loads plus operating reserves on July 24th may be a function of both high temperatures and under forecasting of temperatures – leading to over selling of NW surplus energy.

There were also transmission congestion issues that prevented some of the "surplus" energy held in reserve from going south to California. For example, generation from Coulee going south was limited due to transmission constraints.

Howard asked, whether this was a reliability or an economic event? Due to the apparent excess of forward sales as a result of missed forecasts, John concluded this was more of an economic event due to market transactions rather than a reliability event due to inadequacy of resources. Paul asked the group to consider, whether such issues as forward sales should be factored into the Resource Adequacy Standard?

II Revised Pilot Capacity Metric and Targets

A Technical Revisions to Adverse Temperature Component of Targets

John explained how he expanded the July PNW reserve margin slide (slide 13 from his presentation to the Steering Committee on July 28) to include a calculation of the PNW's PRM for July 24th as a first step in deciding whether the July 24th event should influence the Steering Committee to select a more conservative pilot capacity standard in the summer.

John described his derivation of the increase of PNW loads on July 24th above expected loads, which is estimated at about 1,000 MW higher than expected. Stefan Brown suggested that using a weighted average of the maximum and minimum temperatures underestimates the load excursions for adverse temperature events. John indicated that Council staff is investigating just using high temperatures in the summer and low temperatures in the winter to correlate to peak hour load. Since WECC asks for submittal of peak hour loads, this number is important. Also, the loads over the 10-hour per day and 5 day a week sustained peaking duration for the capacity metric can be estimated from the peak hour load based on historical load shapes.

Then John described how he estimated resource availability on July 24th. He showed sustained regional hydro peaking capacity for various durations including the 10 hour duration, which, although not estimated over a five day period, is supposed to be reflective of the pilot capacity standard. In response to a question from Tom, John clarified that this estimate of hydro capability does not include the additional sustained peaking capacity (1,450 MW) achievable from setting up the Columbia River System to maximize generation on July 24th. This hydro capability also does not incorporate the latest reduction in generation due to spill requirements. Finally, John explained that the previous estimate of a 58% PRM was based on a 2-hour rather than a10-hour sustained hydro peaking capacity duration and so was incorrect.

John presented the revised PRMs for July—24 % under expected average temperature conditions and 16% for July 24th. Changes between the analysis presented for expected conditions at today's meeting and that presented on July 28th include:

- Correcting the hydro resource number to reflect the 10-hour rather than the 2-hour sustained peaking capacity;
- Changing the contribution of uncontracted IPP generation to PNW adequacy from 3,500 MW to 0 MW
- Changing the assumption of contribution of wind generation to sustained peaking capacity from 30% to 15% capacity factor

John explained why only 2,500 MW is shown as exports even though the interties were loaded to about 7,000 MW. The remainder of the resources serving the interties is estimated to consist of the 3,500 MW of uncontracted IPP generation and imports from Canada to California.

Steve Fisher disagreed with the assumption that all uncontracted IPP generation will not be available to the Northwest due to California's month-ahead resource adequacy procurement requirement. He stated that the capacity resources procured by California utilities might actually be uneconomical resources in California, or elsewhere. The uncontracted IPP generation may be procured on a day-ahead basis as economical displacement energy for these high-cost resources. If this is the procurement timeframe, then NW utilities have equal opportunity to contract for IPP generation. Moreover, there are no long-term firm transmission rights available for this IPP capacity on the interties.

B Lessons Learned from July 24th in Calculating Regional Surplus

Tom asked, what is the correlation between California and Northwest peak events? Wally and Mary indicated that the WECC Loads and Resources Subcommittee (LRS) has investigated the simultaneous occurrence of heat storms. The previous adverse temperature event investigated was probably not as bad as July 24th. The LRS is probably the right forum to deal with this question and may need some assistance from experts in the field to determine the probability of the simultaneous occurrence of an extreme temperature event in the NW and California. Wally suggested that this issue and its implications for the PNW Capacity Standard could be one of the tasks of the Technical Committee during the year to finalize the pilot standard.

John reviewed the components, which comprise the PRM, which is defined as the sustained peaking capacity in excess of that needed to meet load over the 10 hour per day and 5 days per week duration selected by the Technical Committee to simulate both cold snaps in the winter and heat waves in the summer. The components include 6% to cover operating reserves for the first hour and supplemental reserves to avoid load curtailments in the hours after the first hour and some percentage to cover adverse temperature events in the winter and the summer.

John reviewed the correlations between temperature deviations for 1 in 20 year events in both summer and winter and the corresponding loads. Meeting participants commented that a 330 MW increase in load per degree-day for December appears high based on the Power Pool's 300 MW/degree-day for the entire Power Pool footprint rule-of thumb. Also, load increases per degree-day for the other winter months are significantly less than the December increase.

Steve Fisher pointed out that 6% may be insufficient to cover forced outages because Columbia Generating Station (CGS), as the Region's single largest contingency, is about 6%. **Action Item:** The Technical Committee needs to take another look at this component to determine whether an additional % is needed to cover additional forced outages if CGS were forced out. John pointed out that a lower % could be supported because the resources do not reflect all of the hydro flexibility that is achievable.

This led to a discussion of how much hydro flexibility should be assumed in the resource adequacy calculation. Currently, John's presentation assumes only half of the regional hydro flexibility calculated from previous analyses is available in order to be conservative.

John concluded that by assuming neither uncontracted IPP generation nor any out-of-region spot is available to the Region in summer means that the PNW becomes capacity rather than energy constrained in the summer.

III Next Steps to Reaching Decision on Pilot Capacity Standard

John posed a number of questions to the Steering Committee regarding what assumptions should we use in evaluating the Region's resource adequacy in the summer and the winter:

- The Committee agreed with the winter assumptions

Dick Adams asked the question whether the Region's utilities would be comfortable with a summer standard of 12%, which would be 2,600 MW less than what we had on July 24th. Steve Fisher stated that the type of situation posed by Dick assumes that California has a claim on 7,000 MW of intertie resources, for which they have not necessarily contracted. Mary indicated that Bob Kahn has stated the IPPs do not have long-term rights to the intertie, so practically speaking many of these sales have to be made via NW utilities, which means NW utilities could decide not to resell this capacity. Paul stated that we almost have to plan on a West Coast-wide basis because we are all competing for the same resources at the same time. Wally affirmed that we need a WECC-wide analysis, which is the type of analysis the LRS is trying to develop.

Paul concluded that it is critical that we reconcile the July 24th event with the PNW summer capacity standard. Steve Weiss stated that since the July 24th event was a more than one in twenty year event, it is appropriate to use hydro flexibility including curtailing fish spill as long as the revenues collected from spill curtailment benefit fish.

Action Item: Paul asked the Technical Committee to develop an analysis, which provides a West Coast perspective for the July 24^{th} event. Howard also asked the Technical Committee to estimate the probability of the July 24^{th} event in terms of joint probabilities of extreme temperatures in California and PNW.

Tom suggested forming a Steering Committee subgroup (Dick Adams, Howard Schwartz and Steve Fisher) to help frame the Technical Committee's analyses. Steve Fisher asked, whether the PNW sold itself into trouble, or was this a physical issue? Wally asked, whether the PNW was short, or was the issue the desire to avoid high cost purchases?

IV Schedule Meeting and Adjourn

The next Steering Committee meeting is scheduled for October 3, 2006 from 10 a.m. to 3 p.m. at the Council's Offices.

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